6652250 "SHORTEN"

FIGURE 1

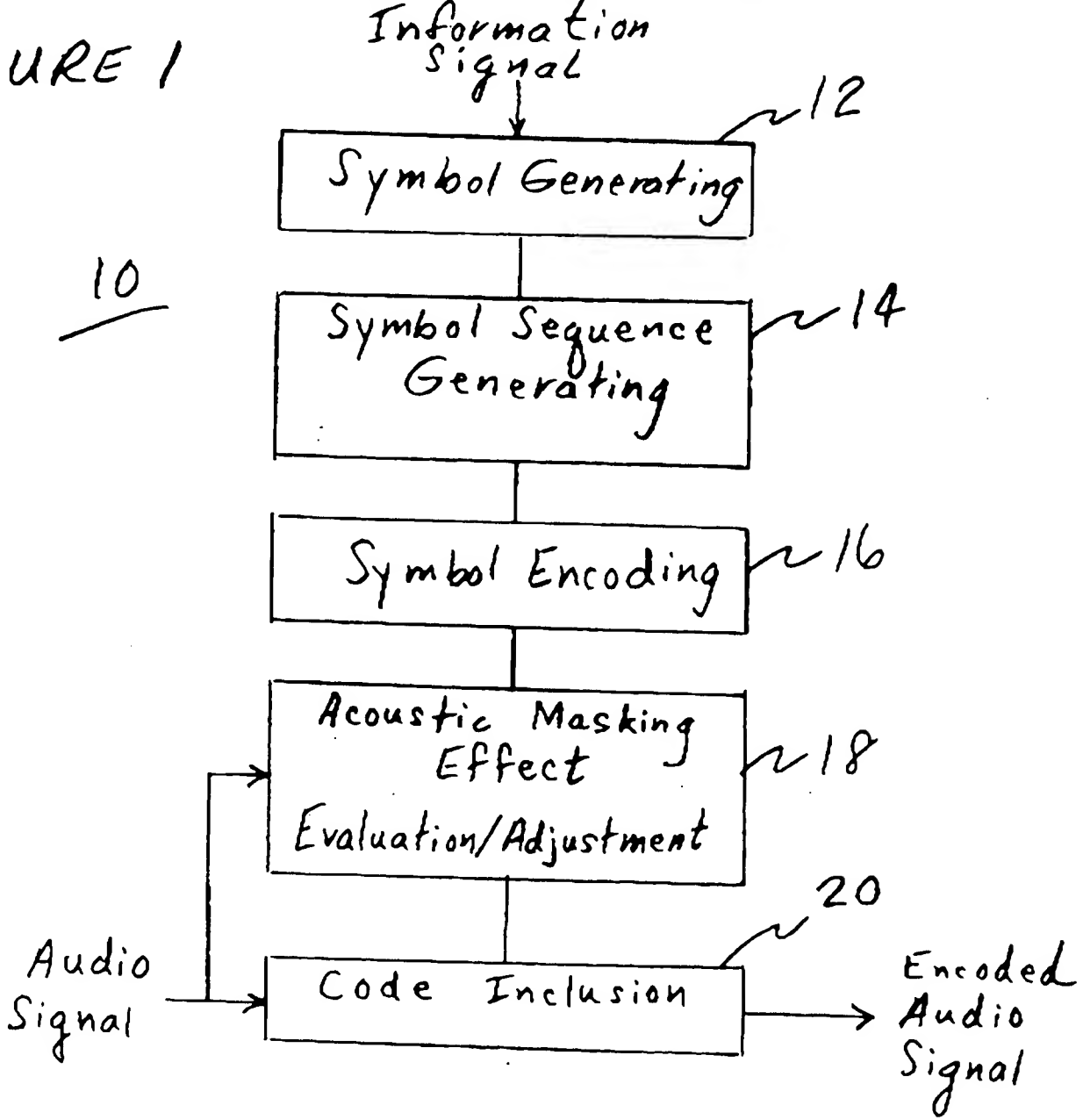


FIG. 2

INFORMATION SIGNAL	SYMBOL
COPYRIGHTED WORK	S_1
AUTHOR	S_2
BROADCASTING STATION	S_3
DATE	S_4

FIG. 3A

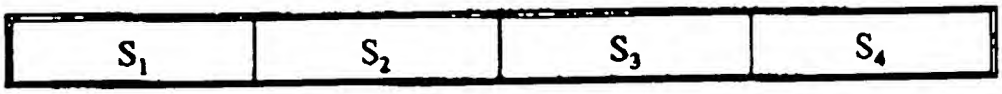


FIG. 3B

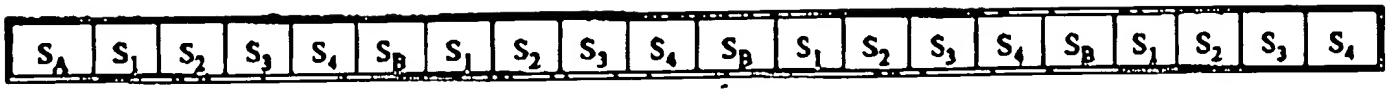


FIG. 3C

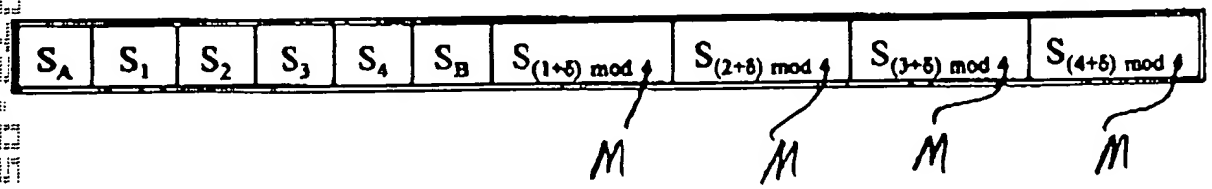
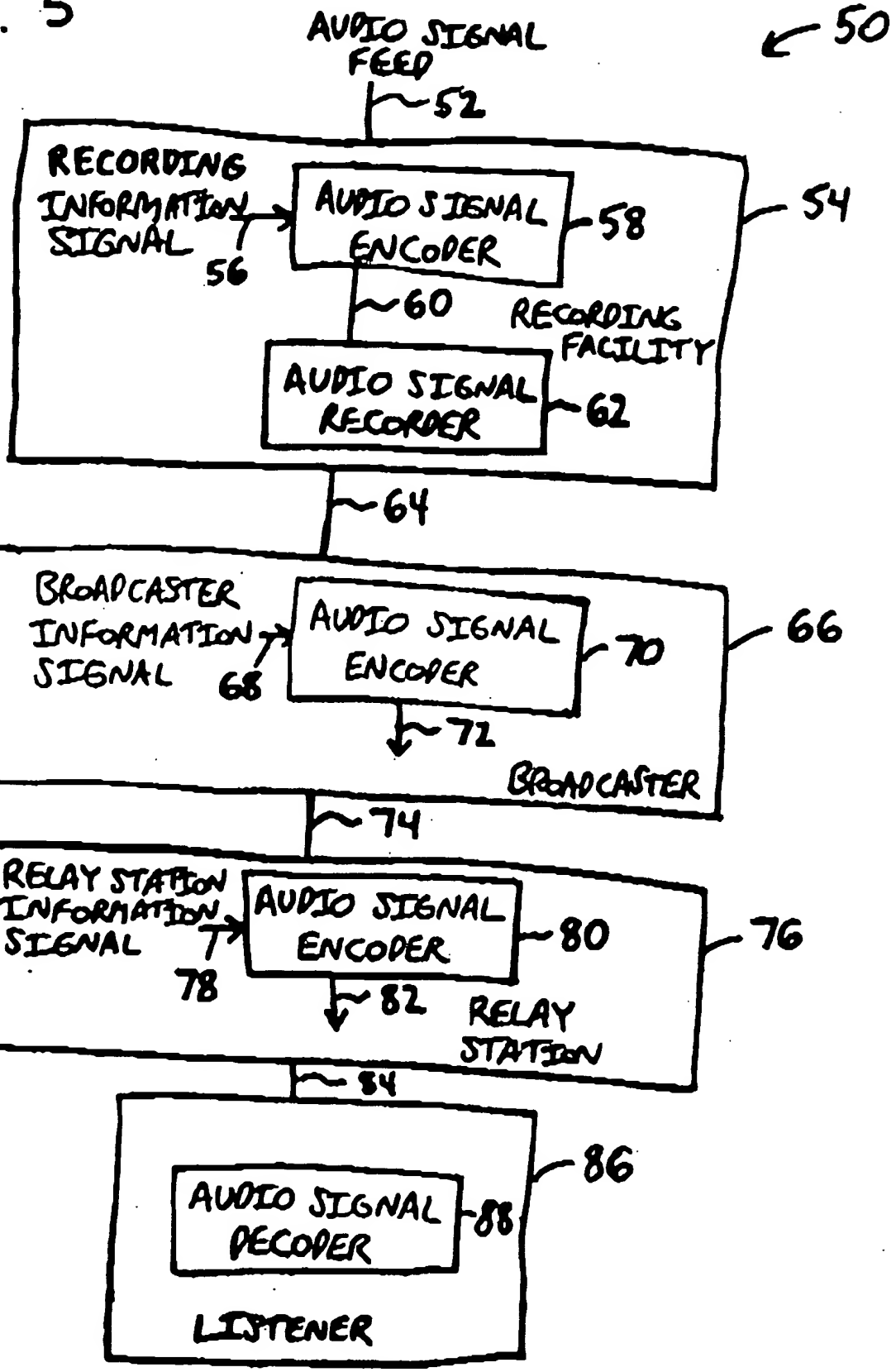


FIG. 4

		SYMBOL										
		S_A	S_B	S_1	S_2	S_3	S_4	•	•	•	S_{N-1}	S_N
FREQUENCY COMPONENT	1	f_{1A}	f_{1B}	f_{11}	f_{12}	f_{13}	f_{14}	•	•	•	$f_{1[N-1]}$	f_{1N}
	2	f_{2A}	f_{2B}	f_{21}	f_{22}	f_{23}	f_{24}	•	•	•	$f_{2[N-1]}$	f_{2N}
	3	f_{3A}	f_{3B}	f_{31}	f_{32}	f_{33}	f_{34}	•	•	•	$f_{3[N-1]}$	f_{3N}
	4	f_{4A}	f_{4B}	f_{41}	f_{42}	f_{43}	f_{44}	•	•	•	$f_{4[N-1]}$	f_{4N}
	•	•	•	•	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•	•	•	•	•
	M-1	$f_{[M-1]A}$	$f_{[M-1]B}$	$f_{[M-1]1}$	$f_{[M-1]2}$	$f_{[M-1]3}$	$f_{[M-1]4}$	•	•	•	$f_{[M-1][N-1]}$	$f_{[M-1]N}$
	M	f_{MA}	f_{MB}	f_{m1}	f_{m2}	f_{m3}	f_{m4}	•	•	•	$f_{M[N-1]}$	f_{MN}

Fig. 5


AUDIO SIGNAL FEED
52
50
RECORDING INFORMATION SIGNAL
56
AUDIO SIGNAL ENCODER
58
54
60
RECORDING FACILITY
AUDIO SIGNAL RECORDER
62
64
BROADCASTER INFORMATION SIGNAL
68
AUDIO SIGNAL ENCODER
70
66
72
BROADCASTER
74
RELAY STATION INFORMATION SIGNAL
78
AUDIO SIGNAL ENCODER
80
76
82
RELAY STATION
84
AUDIO SIGNAL DECODER
88
86
LISTENER

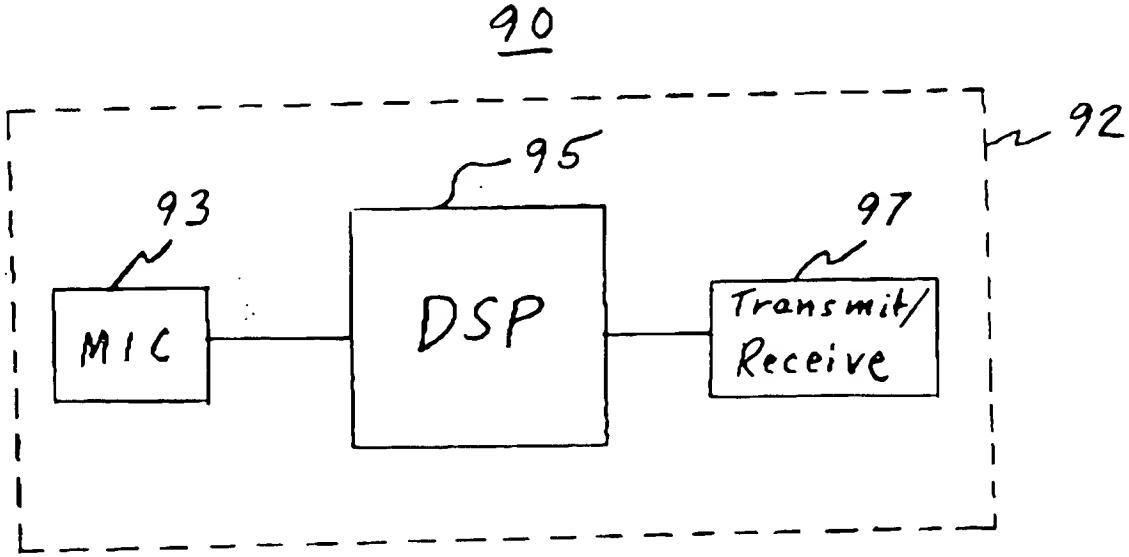


FIGURE 6

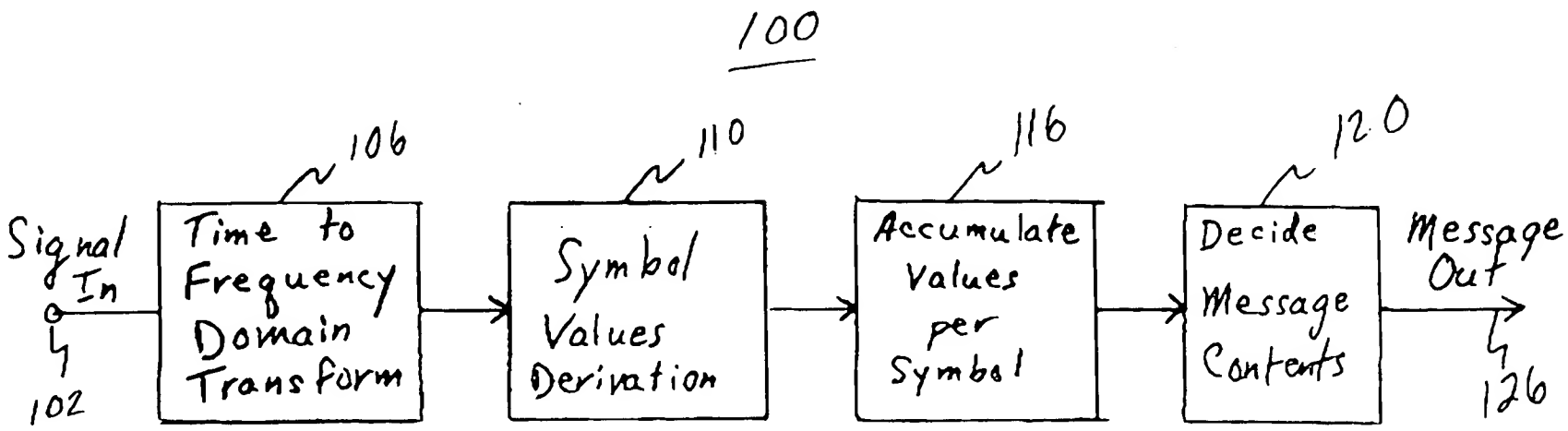

100
106
110
116
120
Signal In
102
Time to Frequency Domain Transform
Symbol Values Derivation
Accumulate Values per Symbol
Decide Message Contents
Message Out
126

FIGURE 7

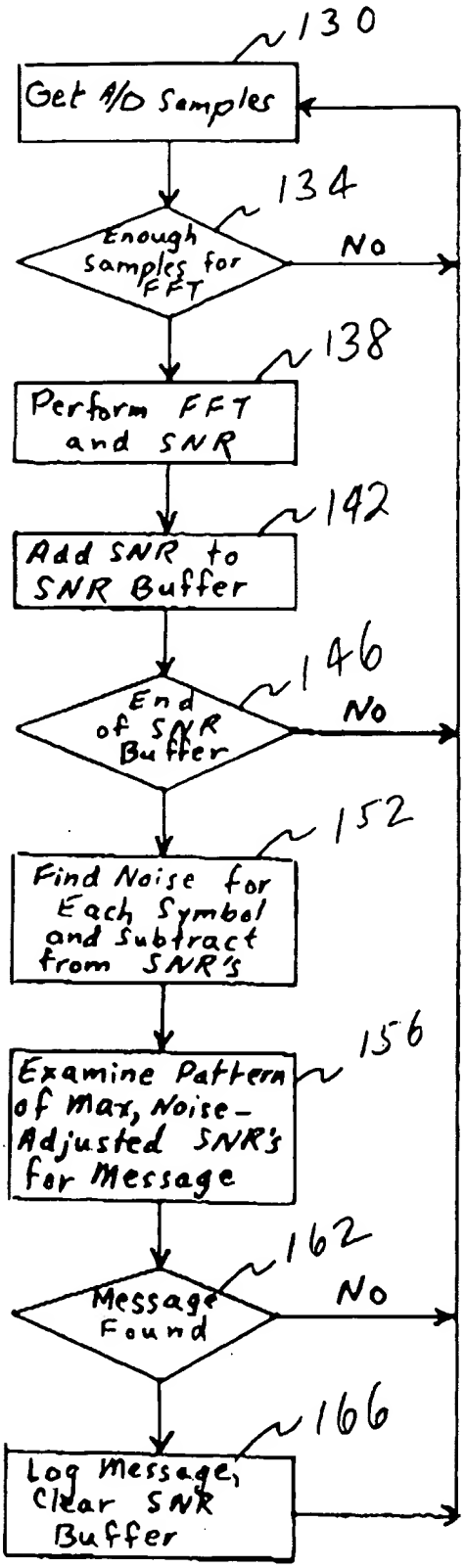

130
Get A/D Samples
134
Enough samples for FFT
No
138
Perform FFT and SNR
142
Add SNR to SNR Buffer
146
End of SNR Buffer
No
152
Find Noise for Each Symbol and Subtract from SNR's
156
Examine Pattern of Max, Noise-Adjusted SNR's for Message
162
Message Found
No
166
Log Message, Clear SNR Buffer

FIGURE 8

6652250 - SHORTEGO

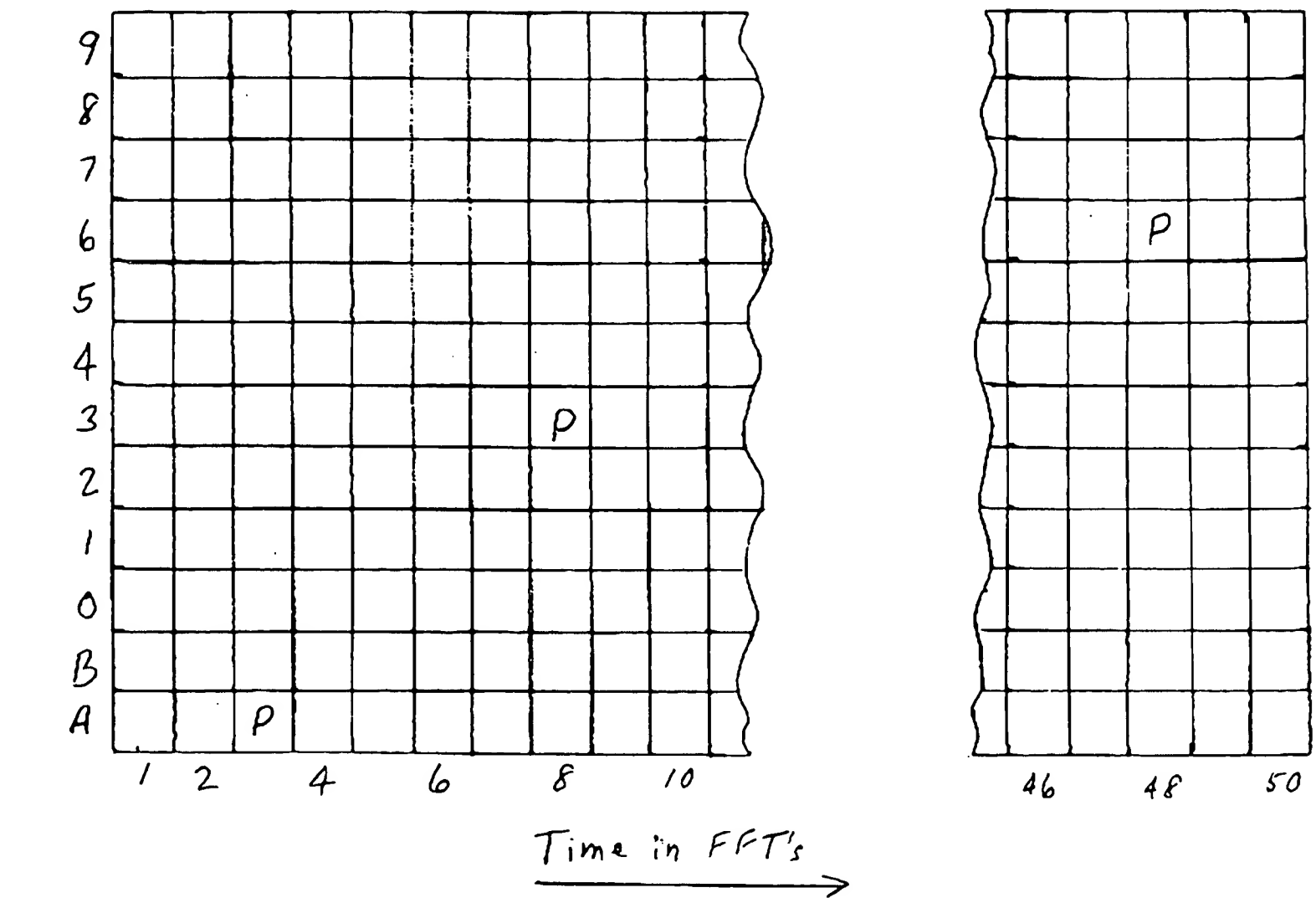


FIGURE 9

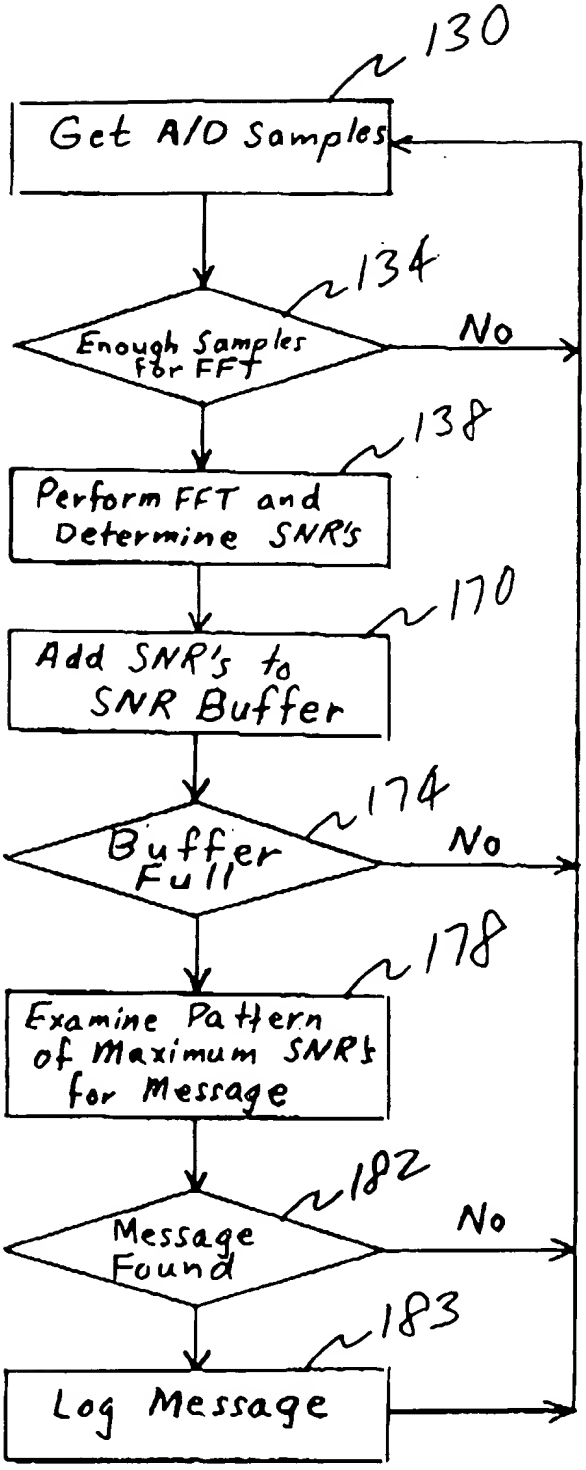

130
Get A/D Samples
134
Enough Samples for FFT
No
138
Perform FFT and Determine SNR's
170
Add SNR's to SNR Buffer
174
Buffer Full
No
178
Examine Pattern of Maximum SNR's for Message
182
Message Found
No
183
Log Message

FIGURE 10